

ABSENCE OF LIGAMENTUM TERES – A RARE VARIATION OF LIVER

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Abstract: The round ligament of the liver also commonly known by its Latin name as ligamentum teres or ligamentum teres hepatis which is a degenerative string of tissue that exists in the free edge of the falciform ligament of the liver. Anatomically, the round ligament divides the liver into left part of the liver into medial and lateral sections. In our cadaveric dissections found with an abnormal findings of liver with the peculiar absence of ligamentum teres.

Key words: Liver, Quadrate lobe, Ligamentum teres, Left umbilical Vein.

Introduction: The liver is a roughly triangular organ that extends across the entire abdominal cavity just inferior to the diaphragm. Most of the liver’s mass is located on the right side of the body where it descends inferiorly toward the right kidney. The liver is made of very soft, pinkish-brown tissues encapsulated by a connective tissue capsule. This capsule is further covered and reinforced by the peritoneum of the abdominal cavity, which protects the liver and holds it in place within the abdomen. The peritoneum connects the liver in 4 locations: the coronary ligament, the left and right triangular ligaments, and the falciform ligament. The coronary ligament connects the superior portion of the liver to the diaphragm. Located on the lateral borders of the left and right lobes, the left and right triangular ligaments connect the superior ends of the liver to the diaphragm. The falciform ligament runs inferiorly from the diaphragm across the anterior edge of the liver to its inferior border. At the inferior end of the liver, the falciform ligament forms the round ligament (ligamentum teres) of the liver and connects the liver to the umbilicus. The round ligament is a remnant of the umbilical vein that carries blood into the body during foetal development. The liver consists of 4 distinct lobes – the left, right, caudate, and quadrate lobes. The left and right lobes

are the largest lobes and are separated by the falciform ligament. The right lobe is about 5 to 6 times larger than the tapered left lobe. The small caudate lobe extends from the posterior side of the right lobe and wraps around the inferior vena cava. The small quadrate lobe is inferior to the caudate lobe and extends from the posterior side of the right lobe and wraps around the gallbladder.

Materials & Methods: Human cadavers, Scalpel, Surgical blades, Surgical gloves, Mask, Cotton, Forceps, Scissors & other stationeries.

Discussion: Liver is Situation in the Right upper Quadrant that is Right Hypochondrium, Epigastrium & Extends into Left Hypochondrium. Colour is Reddish brown in colour & Weights around 1600 gm in males and 1300 gm in females with Wedge shape. Liver consists of 2- Lobes and 5- Surfaces as Anterior, Posterior, Superior, Inferior, Right lateral surfaces. Anteriorly - Two Lobes are seperated by Falciform ligament. Superiorly - Seperated by Ligamentum teres. Inferiorly - Seperated by Ligamentum venosum. Quadrate lobe is situation in the Inferior surface, Bounded anteriorly by inferior border of liver, Posteriorly formed by porta hepatis, Right side formed by gall bladder, Left side by Ligamentum teres.(obliterated left umbilical vein).

NORMAL LIVER



Absence of Ligamentum teres



The round ligament represents the remnant of the fetal umbilical vein. The round ligament therefore actually exists in mammals but Prenatally two months after birth, the umbilical vein is patent but subsequently degenerating into fibrous tissue called as the round ligament of liver. In adults, the round ligament of liver remains as small paraumbilical veins in the substance of the ligament, which act as an important portacaval anastomosis in severe portal hypertension, resulting in a caput medusae presentation.

Umbilical veins - The unpaired umbilical vein carries oxygen and nutrient rich blood derived from fetal-maternal blood exchange at the chorionic villi. More than two-thirds of the blood enters the liver from its inferior border, while the remainder is shunted to the inferior vena cava through the ductus venosus, whence it returns to the fetal right atrium.

Within a week of birth, the infant's umbilical vein is completely obliterated and is replaced by a fibrous cord called the round ligament of the liver (also called ligamentum teres hepatis). It extends from the

umbilicus to the transverse fissure, where it joins with the falciform ligament of the liver to separate the segment 4 from 2 & 3 of the left liver lobes. In this anomalous condition remnant of ligamentum teres is absent & shows the absence of quadrate lobe in the inferior surface of adult liver.

Summary: 4-vessels cords - Several combinations of vessels can give the appearance of 4-vessel cords as Two veins & two arteries - Four-vessels cords result from the persistence of the right umbilical vein. Reports suggest an increase in congenital anomalies such as ectopia cordis, atrial septal defect, symmetrical bifid liver, cleft lip and palate, arteriovenous fistulas of the placenta.

Conclusion : Useful for the anatomists, Hepatologists in segmenting the liver, embryologists in tracing out the absence of remnant of umbilical vein i.e ligamentum teres, Imaging specialists in diagnosing and surgeons to prevent the possible misdiagnosis in surgical process especially for laproscopic surgeons.

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